DNSSD Advertising Proxy

Supporting legacy mDNS clients in a Unicast DNSSD world

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Remaining Issues

MUST or MUST not advertise link-local addresses (handling scoped addresses)

Over-emphasis of mDNS conflicts

SRP replication behavior (could just be multi-proxy behavior)

Service uses SRP then later uses native mDNS for same service on same link

Key record publication

TTLs

Vague/lacking normative advice, e.g. for TSR, name conflicts

Scoped addresses

(e.g. ULA, link-local)

Currently, AP SHOULD elide link-local addresses when not applicable

Guidance on GUAs is vague

Proposal:

- Advertise known-routable addresses on links where they're routable
- Advertise known-on-link addresses only on links they're on
- If not known, only advertise link-local address if it's all we have
- Stack can make sensible decisions about ULAs: we don't have to guess.

mDNS conflicts

Our decision was that advertising proxy advertises contents of a DNS zone

mDNS hosts can advertise conflicting names; we can’t stop them

We also can’t change the zone or notify e.g. the SRP client

Solutions:

- Subdomains of .local
- Rename on conflict
- Combination?

mDNS conflicts (2)

Problem with subdomains of .local: some apps don’t handle them correctly.

Problem with renaming: some apps (e.g. Matter) don’t handle it

This argues for a hybrid approach:

- Conflicts in the DNS zone can’t happen because there is a single source of truth, so
- When an mDNS conflict happens, use a hybrid fallback strategy
- When it doesn’t happen, ??? (hybrid naming strategy?)

SRP replication behavior

Really: multiple proxies of the same DNS zone

Without mitigation, mDNS probing/announcing behavior is extremely wasteful

mDNS on WiFi does a poor job of eliminating duplicate answers to queries

These are going to be particularly bad for multi-proxy scenarios

Fx is out of scope for this document

- can advise what to do
- describe how to do it in another document
- Some way to have one leader and many backups (?)
- Not clear how prescriptive we need to be, but we need better tools.

Service uses SRP then later uses native mDNS

(same service on same link)

Not clear that this is ever a good idea, but it gets proposed from time to time

We need to specify how this works regardless (I think)

Possibly not here, but maybe should mention the issue?

A client that uses SRP and mDNS or or mDNS has to use TSR

Key Record publication

Discussion on github focuses on whether Key RR should be in the zone at all

The real question is (IMHO), should advertising proxy advertise it via mDNS?

The answer is that some record has to be advertised to hold the name

I proposed a while back that AP could optionally advertise a dummy value for privacy or space reasons

Etc.

TTLs

Document should say what TTLs to use

Longer is better for network bandwidth use

Can’t actually require new behavior from clients

One proposal was to just use the DNS RR TTL, but with min and max values

We could give advice but not make normative requirements, or give flexible normative requirements

Unless this really is “one size fits all”

Vague normative advice

We mention TSR kind of as a “one last thing” requirement that’s a bit vague

- Should fix this, integrate it better with the text, make it clearly normative

The current text around name conflicts is sort of a menu of various approaches implementations could take, rather than a clear, specific and relatively tight set of requirements

- Do we want to give implementors this flexibility?

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